Notice of Allowability	Application No.	Applicant(s)	
	09/902,213	HOLEVA, LEE F.	
	Examiner	Art Unit	
	Jefferey F Harold	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *11/12/04*.

2. ☒ The allowed claim(s) is/are *48-59*.

3. ☒ The drawings filed on *02 October 2001* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 48-59 are allowed.

2. The following is an examiner's statement of reasons for allowance:

Regarding **claim 48**, the prior art of record discloses automatic gain control for providing automatic gain control with an adaptive gain level comprising: an automatic gain control circuit to provide an automatic gain controlled output signal; an output power block for providing output power of the automatic gain controlled output signal; an adder for determining an error signal in accordance with the output power of the automatic gain controlled output signal; however the prior art of record fails to disclose or fairly suggest a gain lookup table for storing gain values, wherein (i) the gain table is adapted in accordance with the error signal; and (ii) the gain table is capable of providing the gain values in accordance with an index formed by a function comprising: $q(t) = ((TABLE\_SIZE-1/THSAT-THQUIET-1) (P_{in} (t) - THQUIET))$ wherein TABLE SIZE comprises a number of entries in the gain; THSAT and THQUIET comprise threshold levels, and $P_{in}(t)$ comprises an input power level.

Regarding **claim 49**, the prior art of record discloses a method of providing an automatic gain control system comprising a gain lookup table with an adaptive gain level comprising the steps of: providing an automatic gain controlled output; estimating an output power of the automatic gain control system; forming an error signal in accordance with the output power of the automatic gain control system; however the prior art of record fails to disclose or fairly suggest generating an address to access the

gain lookup table as a function of an input power level where the function comprises: $q(t) = ((TABLE\_SIZE-1/THSAT-THQUIET-1) (P_{in} (T) - THQUIET))$ wherein TABLE SIZE comprises a number of entries in the gain; $P_{in}(t)$ comprises the input power level; and THSAT and THQUIET comprise threshold levels; and adapting the gain lookup table in accordance with the error signal.

Regarding **claim 50**, the prior art of record discloses an automatic gain control for providing automatic gain control with an adaptive gain level comprising: an automatic gain control circuit to provide an automatic gain controlled output signal, an output power block for providing the output power of the automatic gain controlled output signal; an adder for determining an error signal in accordance with the output power of the automatic gain controlled output signal; however, the prior art of record fails to disclose or fairly suggest a gain lookup table for storing gain values, wherein the gain table is adapted in accordance with the error signal, wherein the gain values are set in accordance with a function comprising: $g(t) = GHI \exp (-b(P_{in}(t)) - THQUIET))$ $b = (\log GHI - \log GSAT)/ (THSAT - THQUIET)$ wherein g(t) comprises the gain values, GHI GSAT are fixed gain levels, and THSAT, THQUIET are threshold values.

Regarding **claim 52**, the prior art of record discloses a method for providing an automatic gain control system comprising a gain lookup table with an adaptive gain level comprising the steps of: providing an automatic gain controlled output; estimating an output power of the automatic gain control system; calculating an error signal in accordance with the output power of the automatic gain control system; and adapting the gain lookup table in accordance with the error signal, wherein gain values of the

gain lookup table are set in accordance with a function comprising: g(t) = GHI exp (-b(P_{in}(t)) – THQUIET)) b = (log GHI - log GSAT)/ (THSAT – THQUIET) wherein g(t) comprises the gain values, GHI GSAT are fixed gain levels, and THSAT, THQUIET are threshold values.

Regarding **claim 54**, the prior art of record discloses an automatic gain control for providing automatic gain control with an adaptive gain level comprising: an automatic gain control circuit to provide an automatic gain controlled output signal; an output power block for providing the output power of the automatic gain controlled output signal; an adder for determining an error signal in accordance with the output power of the automatic gain controlled output signal; however, the prior art of record fails to disclose or fairly suggest a gain lookup table for storing gain values, wherein the gain table is adapted in accordance with the error signal, wherein the gain table is adapted with a new gain value, $G_{new}(q)$ that is computed in accordance with the scaled output signal $P_{out}(t)$ comprising the following function: $G_{new}(q) = G_{old}(q) + \beta$(set-point - Pout(t)); wherein β is a scaling factor $0 < \beta < 1$, the set-point is a desired reference level, $P_{out}(t)$ comprises the output power of the automatic gain controlled output signal, and $G_{old}(q)$ comprises a gain table value.

Regarding **claim 55**, the prior art of record discloses a method of providing an automatic gain control system comprising a gain lookup table with an adaptive gain level comprising the steps of: providing an automatic gain controlled output; estimating an output power of the automatic gain control system; calculating an error signal in accordance with the output power of the automatic gain control system; and adapting

the gain lookup table in accordance with the error signal, however, the prior art of record fails to disclose or fairly suggest wherein the step of adapting adapts the gain table with $G_{new}(q)$ that is computed in accordance with the scaled output signal $P_{out}(t)$ comprising the following function: $G_{new}(q) = G_{old}(q) + \beta(\text{set-point} - \text{Pout}(t))$; wherein β is a scaling factor $0 < \beta < 1$, the set-point is a desired reference level, $P_{out}(t)$ comprises the output power of the automatic gain controlled output signal, and $G_{old}(q)$ comprises a gain table value.

Regarding **claim 56**, the prior art of record discloses an automatic gain control for providing automatic gain control with an adaptive gain level comprising: an automatic gain control circuit to provide an automatic gain controlled output signal; an output power block for providing the output power of the automatic gain controlled output signal, however, the prior art of record fails to disclose or fairly suggest wherein the output power block comprises a function formed by $P_{out}(t + 1) = (1 - \acute{\alpha}) P_{out}(t) + \acute{\alpha}$ $|ne_{out}(t)|$ where $0 < \acute{\alpha} < 1$, ne_{out} comprises an output signal level, and P_{out} comprises an output power level; an adder for determining an error signal in accordance with the output power of the automatic gain controlled output signal; and a gain lookup table for storing gain values, wherein the gain table is adapted in accordance with the error signal.

Regarding **claim 57**, the prior art of record discloses a method of providing an automatic gain control system comprising a gain lookup table with an adaptive gain level comprising the steps of: providing an automatic gain controlled output; however,

the prior art of record fails to disclose or fairly suggest estimating an output power of the automatic gain control system using a single pole filter comprising: $P_{out}(t + 1) = (1 - \acute{\alpha})$ $P_{out}(t) + \acute{\alpha} |ne_{out}(t)|$ where $0 < \acute{\alpha} < 1$; t comprises a time variable, and P_{out} comprises an output power level; ne_{out} comprises an output signal level, and $\acute{\alpha}$ comprises a time constant; calculating an error in accordance with the output power of the automatic gain controlled output signal; and adapting the gain lookup table in accordance with the error signal.

Regarding **claim 58**, the prior art of record discloses an automatic gain control for providing automatic gain control with an adaptive gain level comprising: an automatic gain control circuit to provide an automatic gain controlled output signal, an output power block for providing the output power of the automatic gain controlled output signal; an adder for determining an error signal in accordance with the output power of the automatic gain controlled output signal; and a gain lookup table for storing gain values, wherein the gain table is adapted in accordance with the error signal, and wherein an input power level forms an index to access the gain lookup table, however, the prior art of record fails to disclose or fairly suggest wherein the index q(t) to access the gain lookup table is formed by a function comprising: q(t) = ((TABLE_SIZE-1/THSAT-THQUIET-1) (P_{in} (t) – THQUIET)) wherein TABLE SIZE comprises a number of entries in the gain; THSAT and THQUIET comprise threshold levels, and $P_{in}(t)$ comprises an input power level.

Regarding **claim 59**, the prior art of record discloses a method of providing an automatic gain control system comprising a gain lookup table with an adaptive gain level comprising the steps of: providing an automatic gain controlled output; estimating an output power of the automatic gain control system; calculating an error signal in accordance with the output power of the automatic gain control system; however, the prior art of record fails to disclose or fairly suggest adapting the gain lookup table in accordance with the error signal by forming an address to access the gain lookup table as a function of an input power level, wherein forming the address q(t) comprises a function: $q(t) = ((TABLE\_SIZE-1/THSAT-THQUIET-1) (P_{in} (t) – THQUIET))$ wherein TABLE SIZE comprises a number of entries in the gain lookup table, $P_{in}(t)$ comprises an input power level, and THSAT and THQUIET comprise threshold levels.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferey F Harold whose telephone number is 703-306-5836. The examiner can normally be reached on Monday - Friday 9 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H Tran can be reached on 703-305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jefferey F Harold
Examiner
Art Unit 2644

JFH
March 18, 2005